

REMARKS

Claims 1, 3, 4, 11, and 13-15 are currently being amended pursuant to 37 C.F.R. §1.114. These amendments do not introduce new matter within the meaning of 35 U.S.C. §132. Accordingly, Applicant respectfully requests the Examiner to enter the amendments.

1. Rejection of Claim 14 Under 35 U.S.C. §112, 1st Paragraph

The Office Action states,

Claim 14 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The recitation of a 'combination' of 'extruding, (and) injection molding' is not shown by the Specification, as originally filed, at page 21 (lines 16-21) as applicants contend.

RESPONSE

Applicant respectfully traverses the rejection of claim 14.

In particular, there is no *in haec verba* requirement to satisfy the requirements of 35 U.S.C. §112, 1st paragraph. In fact, "If applicant amends the claims and points out where and/or how the originally filed disclosure supports the amendment(s), and the examiner finds that the disclosure does not reasonably convey that the inventor had possession of the subject matter of the amendment at the time of the filing of the application, **the examiner has the initial burden of presenting evidence or reasoning to explain why** persons skilled in the art would not recognize in the disclosure a

description of the invention defined by the claims." See MPEP §2163 (II) (A), and §2163.04.

In Applicant's previous response of December 5, 2007, Applicant outlined the basis for the amendment to claim 14 could be found throughout the specification, and in particular on page 16, lines 25-30. Therefore, since Applicant's previous response pointed out where and/or how the originally filed disclosure supported the previous amendment to claim 14, as well as the fact that the current rejection falls short of the required showing of evidence or reasoning why a person skilled in the art would not recognize in the disclosure a description of the currently claimed process, Applicant respectfully believes the current rejection should be withdrawn.

As such, Applicant respectfully believes claim 14 fully complies with 35 U.S.C. §112, and kindly requests the Examiner to withdraw the current rejection.

2. Rejection of Claims 1-5, 7 and 9-18 Under 35 U.S.C. §102(b)

The Office Action states,

Claims 1-5, 7 and 9-18 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Fischer et al. (US 6,248,829), newly cited.

Note the Abstract, column 1 (lines 35-38 and 47-56), column 2 (lines 30-51), column 3 (line 56) to column 4 (line 5), column 4 (line 38) to column 9 (line 67), column 12 (lines 32-36), the many Examples and the claims, particularly claim 6, of the patent.

RESPONSE

Claim 2 has been cancelled rendering the rejection thereof moot. With respect to claims 1, 3-5, 7, and 9-18, Applicant respectfully traverses the rejection thereof.

For a reference to anticipate an invention, all of the elements of that invention must be present in the reference. The test for anticipation under section 102 is whether each and every element as set forth in the claims is found, either expressly or inherently, in a single prior art reference. *Verdegaal Bros. V. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must also be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990).

Applicant respectfully believes U.S. Patent 6,248,829 (herein referred to as "Fischer, et al.") fails to disclose, teach, or suggest Applicant's currently claimed propylene copolymer compositions comprising a propylene homopolymer A) and a propylene copolymer B) present as separate phases, and wherein a weight ratio of the propylene homopolymer A) and propylene copolymer B) is from 80:20 to 60:40, with the propylene copolymer composition comprising a haze value of $\leq 30\%$ and a brittle/tough transition temperature of $\leq -15^{\circ}\text{C}$, wherein the propylene copolymer composition is obtained from **a multistage polymerization process** comprising a **metallocene compound**, wherein the metallocene compound is used in each

polymerization phase.

In fact, Fischer, et al. discloses in col. 11, line 63 - col. 12, line 11,

The preparation of the novel polymers of propene can be carried out by a number of processes which are likewise subject matter of the present invention. In one of these processes, the propene copolymers (A) and (B') or the propene homopolymer (B') obtained with the aid of the above-described metallocene catalyst system are, **after they have been prepared separately, physically mixed with one another** at from 150 to 300° C., in particular from 180 to 280° C. In this way, the novel polymers of propene **are formed as a blend** of the propene copolymer (A') and the propene copolymer (B') or the propene homopolymer (B').

The physical mixing is carried out in customary mixing equipment, for example in kneaders, Brabender mixers, in mills or else in extruders, preferably in extruders. Here, twin-screw extruders have been found to be particularly advantageous. (Emphasis added)

However, as outlined *supra*, Applicant's currently claimed copolymer compositions are obtained from a **multistage polymerization process**. Accordingly, for this reason alone, Applicant respectfully believes the current rejection should be withdrawn.

Notwithstanding, Applicant has unexpectedly found the currently claimed propylene copolymer compositions comprise much lower tensile E modulus values, much higher Charpy impact toughness values, and much higher Charpy notched impact toughness values than the compositions of Fischer, et al. In particular, Examples 4-8 in Fischer, et al. disclose tensile E modulus values ranging from 1173-1326 MPa (ISO 527), while Applicant's exemplary propylene copolymer compositions comprise tensile E modulus values of 602 and 609 MPa,

respectively (ISO 527). Accordingly, Applicant's exemplary copolymers comprise tensile E modulus values ranging from **about 193%** to **about 220%** less than Examples 4-8 in Fischer, et al.

Additionally, the Charpy impact toughness values and the Charpy notched impact toughness values of Examples 4-8 in Fischer, et al, as well as Applicant's exemplary propylene copolymers, are provided in the chart below.

	Ex. 4 (kJ/m ²)	Ex. 5 (kJ/m ²)	Ex. 6 (kJ/m ²)	Ex. 7 (kJ/m ²)	Ex. 8 (kJ/m ²)	Applicant's Example 1 (kJ/m ²)	Applicant's Example 2 (kJ/m ²)
Charpy Impact Toughness (+23°C)	200	220	228	236	-	NF*	NF*
Charpy Impact Toughness (0°C)	80	85	96	115	101	194	NF*
Charpy Impact Toughness (-20°C)	16	16	16	17	16	265	NF*
Charpy Notched Impact Toughness (+23°C)	4.0	4.4	4.9	5.3	5	41.3	49.4
Charpy Notched Impact Toughness (0°C)	1.2	1.4	1.5	1.5	2	28.9	12.6
Charpy Notched Impact Toughness (-20°C)	1.0	0.9	0.9	0.9	1	2.6	2.1

* NF: No Fracture

Accordingly, with respect to the Charpy impact toughness values and the Charpy notched impact toughness values, Applicant's copolymers unexpectedly comprise much higher values.

In light of the above, claims 1, 3-5, 7, and 9-18 are therefore believed to be patentable over Fischer, et al. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

3. Rejection of Claims 1-5, 7, and 9-18 Under 35 U.S.C. §103(a)

The Office Action states,

Claims 1-5, 7 and 9-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al (US 6,248,829) as applied to claims 1-5, 7 and 9-18 above, and further in view of Mehta et al (US 6,583,227), newly cited.

The patent to Fischer et al does not teach the inclusion of a nucleant additive in the disclosed composition.

The reference to Mehta et al teaches at column 18 (lines 6-17) additives that are 'commonly employed with plastics' including the polypropylene resins taught by the reference, include nucleants.

Subsequent use of a nucleant, as taught by Mehta et al, in the composition of Fischer et al for the benefits thereof would have been prima facie obvious to a skilled artisan.

RESPONSE

Claim 2 has been cancelled rendering the rejection thereof moot. With respect to claims 1, 3-5, 7, and 9-18, Applicant respectfully traverses the rejection thereof.

The U.S. Supreme Court in *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966) held that non-obviousness was determined under

§103 by (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art; and, (4) inquiring as to any objective evidence of non-obviousness.

Accordingly, for the Examiner to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP §2142.

Arguments *supra* regarding Fischer, et al. are incorporated herein by reference in their entirety. With respect to the instant rejection, the current Office Action states,

The patent to Fischer et al does not teach the inclusion of a nucleant additive in the disclosed composition.

In order to bridge this acknowledged gap, the current Office Action then states,

The reference to Mehta et al teaches at column 18 (lines 6-17) additives that are 'commonly employed with plastics' including the polypropylene resins taught by the reference, include nucleants.

Subsequent use of a nucleant, as taught by Mehta et al, in the composition of Fischer et al for the benefits thereof would have been *prima facie* obvious to a skilled artisan.

However, as outlined *supra*, Applicant has unexpectedly found the currently claimed propylene copolymers comprise much lower tensile E modulus values, much higher Charpy impact toughness values, and much higher Charpy notched impact toughness values than the compositions of Fischer, et al. In this respect, Mehta, et al. does not remedy the deficiencies of Fischer, et al.

Accordingly, in light of the above, claims 1, 3-5, 7, and 9-18 are therefore believed to be patentable over Fischer, et al. in view of Mehta, et al. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

4. Rejection of Claims 1-5, 7 and 9-18 Under 35 U.S.C. §103(a)

The Office Action states,

Claims 1-5, 7 and 9-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Datta et al (US 6,635,715), newly cited.

The reference to Datta et al teaches the production of a reactor blend of a propylene copolymer blend that may comprise a propylene copolymer, designated as the First Polymer Component (FPC), having an alpha olefin content overlapping with the recited herein for the second copolymer at 10 to 30% by weight at column 5 (line 65) to column 6 (line 46), which alpha olefin may be ethylene, with the first recited copolymer, designated as the Second Polymer Component (SPC), having an alpha olefin content (ethylene) overlapping with that recited herein at 5 to 20% by weight at column 8 (lines 24-49). The range for inclusion of the two polymers is shown at the Abstract. The contemplated molecular weights and MWD are shown at column 9 (lines 34 et seq.). Note the Examples.

Although the reference is silent as regards the haze values, a skilled artisan producing an identical product would have a high expectation to achieve the same haze values recited herein. Likewise, the amount of extractables would be expected, or easily controlled, as

crosslink density will determine soluble fractions and a skilled artisan would know to manipulate these values for desired end-use characteristics. As such, a skilled artisan would have a high level of expectation of success following the teachings of the reference to achieve the claimed inventions.

RESPONSE

Claim 2 has been cancelled rendering the rejection thereof moot. With respect to claims 1, 3-5, 7, and 9-18, Applicant respectfully traverses the rejection thereof.

The U.S. Supreme Court in *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966) held that non-obviousness was determined under §103 by (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art; and, (4) inquiring as to any objective evidence of non-obviousness.

Accordingly, for the Examiner to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP §2142.

Arguments *supra* regarding Fischer, et al. and Mehta, et al. are incorporated herein by reference in their entirety.

With respect to instant rejection, the current Office Action states,

The reference to Datta et al teaches the production of a **reactor blend** of a propylene copolymer blend that may comprise a propylene copolymer. . . . (Emphasis added)

However, Datta, et al. discloses in col. 10, 16-47, and col. 11, 57-62,

The Blend of First and Second Polymer Components

The copolymer blends of first polymer component and second polymer component of the instant invention may be prepared by any procedure that guarantees the intimate admixture of the components. For example, the components can be combined **by melt pressing the components together** on a Carver press to a thickness of about 0.5 millimeter (20 mils) and a temperature of about 180° C., rolling up the resulting slab, folding the ends together, and repeating the pressing, rolling, and folding operation about 10 times. **Internal mixers** are particularly useful for solution or **melt blending**. Blending at a temperature of about 180° C. to 240° C. in a Brabender Plastograph for about 1 to 20 minutes has been found satisfactory. Still another method that may be used for admixing the components involves **blending the polymers in a Banbury internal mixer** above the flux temperature of all of the components, e.g., 180° C. for about 5 minutes. The complete admixture of the polymeric components is indicated by the narrowing of the crystallization and melting transitions characteristic of the polypropylene crystallinity of the components to give a single or a small range crystallization and melting points for the blend. These **batch mixing** procedures are typically supplanted by continuous mixing processes in the industry. These processes are well known in the art and include single and twin screw mixing extruders, static mixers for mixing molten polymer streams of low viscosity, impingement mixers, as well as other machines and processes, designed to disperse the first polymer component and the second polymer component in intimate contact.

The mechanism by which the desirable characteristics of the present copolymer blends are obtained is not fully understood. . . . However, **the intimate blending** of the polymers having the required crystallinity characteristics apparently results in a crystallization phenomenon that modifies the other physical properties of the propylene/alpha-olefin copolymer, thus measurably increasing its commercial utility and range of applications. (Emphasis added)

Accordingly, Applicant respectfully traverses the Examiner's contention Datta, et al., ". . . teaches the production of **a reactor blend**". In fact, as outlined *supra*, Datta, et al. discloses blending two polymer components via **physical blending procedures**, and that such physical blending is critical to the production of the resultant polymers disclosed therein. This fact is clearly further illustrated given every working example, whether exemplary or comparative, demonstrates physically blending the two polymer components together. However, Applicant is currently claiming a process wherein the propylene copolymer composition is obtained from a multistage polymerization process comprising a metallocene compound, wherein the metallocene compound is used in each polymerization phase. Accordingly, for this reason alone, Applicant respectfully believes the current rejection should be withdrawn.

Furthermore, Applicant respectfully traverses the Examiner's contention that,

a skilled artisan producing an identical product would have a high expectation to achieve the same haze values.

. . . .,

as well as,

. . . the amount of extractables would be expected, or easily controlled, as crosslink density will determine soluble fractions and a skilled artisan would know to manipulate these values for desired end-use characteristics. As such, a skilled artisan would have a high level of expectation of success following the teachings of the reference to achieve the claimed inventions."

However, given the differences outlines *supra*, Applicant respectfully believes any reliance on inherency is unfounded. "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is **necessarily** present in the thing described in the reference. Inherency, however, may **not** be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). (Emphasis added); See MPEP §2163.07(a).

In light of the above, claims 1, 3-5, 7, and 9-18 are therefore believed to be patentable over Datta, et al. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

5. DOUBLE PATENTING REJECTION

The Office Action states,

Claims 1-5, 7 and 9-18 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 17-30 of copending Application No. 10/517,588 (Fuchs et al US 2006/0167185). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims embrace the polymers and their compositional

limitations as herein recited and claimed. A skilled artisan would have a high level of expectation to achieve what is recited as to haze value and transition temperature, as claimed.

RESPONSE

Claim 2 has been cancelled rendering the rejection thereof moot. With respect to claims 1, 3-5, 7, and 9-18, Applicant respectfully traverses the rejection thereof.

In particular, the current Office Action states,

Although the conflicting claims are not identical, they are not patentably distinct from each other **because the claims embrace the polymers and their compositional limitations** as herein recited and claimed. (Emphasis added)

However, Applicant is currently claiming, in part, a propylene copolymer composition comprising: (A) a propylene **homopolymer**; and (B) a propylene copolymer containing from 12 to 18% by weight of at least one olefin other than propylene, where the propylene **homopolymer** A and the propylene copolymer B are present as separate phases, the weight ratio of propylene **homopolymer** A to the propylene copolymer B is from 80:20 to 60:40 and the propylene copolymer composition has a haze value of $\leq 30\%$, based on a path length of the propylene copolymer composition of 1 mm, and the brittle/tough transition temperature of the propylene copolymer composition is $\leq -15^{\circ}\text{C}$, and the propylene copolymer composition is obtained from a multiphase polymerization process comprising a metallocene compound, wherein the metallocene compound is used in each polymerization

phase. Alternatively, co-pending U.S. Patent Application Serial No. 10/517,588 is currently claiming, in part, a propylene copolymer composition comprising: (A) a propylene **copolymer** containing from 1 to 20% by weight of olefins other than propylene; and (B) at least one propylene **copolymer** containing from 10 to 30% by weight of olefins other than propylene, where the propylene **copolymer** A and the propylene **copolymer** B are present as separate phases and a portion of n-hexane soluble material is $\leq 2.6\%$ by weight, and the propylene copolymer composition is obtained from a two-stage or multistage polymerization process comprising a catalyst system comprising a metallocene compound, wherein the catalyst system is used in each polymerization stage. A copy of currently pending claims 17-30 for U.S. Patent Application Serial No. 10/517,588 is submitted herewith as ATTACHMENT B.

Applicant believes none of claims 17-30 in co-pending U.S. Patent Application Serial No. 10/517,588 recite the same, or an obvious variant, of currently pending claims 1, 3-5, 7, and 9-18 of the instant Application. As such, Applicant respectfully believes claims 1, 3-5, 7, and 9-18 are patentably distinct from claims 17-30 in U.S. Patent Application Serial No. 10/517,588. For this reason alone, Applicant respectfully believes the current rejection should be withdrawn.

Notwithstanding, Applicant traverses the current rejection since the Examiner has not made clear: (A) the differences between the inventive subject matter defined by the conflicting claims; and

(B) the reasons **why** a person of ordinary skill in the art would conclude that the inventive subject matter defined in the claims at issue is anticipated by, or would have been an obvious variation of, the inventive subject matter defined in a claim in the cited co-pending U.S. Patent Application. See MPEP §804 (1).

In light of the above, Applicant respectfully requests the Examiner to withdraw the currently pending double patenting rejection, and allow claims 1, 3-5, 7, and 9-18.

CONCLUSION

Based upon the above remarks, the presently claimed subject matter is believed to be novel and patentably distinguishable over the references of record. The Examiner is therefore respectfully requested to reconsider and withdraw all rejections, and allow all pending claims 1, 3-5, 7, and 9-18. Favorable action with an early allowance of the claims pending in this application is earnestly solicited.

The Examiner is welcomed to telephone the undersigned practitioner if he has any questions or comments.

Respectfully submitted,

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